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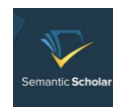
# Best Evidence in Chinese Education

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# Best Evidence in Chinese Education

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## School Bullying: The Intolerable Evil in Children's Growth

Longjun Zhou

*Jiangsu Second Normal University, Nanjing 211200, Jiangsu, China*

*"We are only as strong as we are united, as weak as we are divided."*

*—Albus Dumbledore*

**A**S a result of the fundamental economic, cultural, and social transformations of the past several years, the structure and order of society face the challenge of a perpetually growing anomie. In education, the growing occurrence of school bullying is exemplified by the perpetrators' younger ages and use of violence, as well as the aggravated consequences. The alarming prevalence of school bullying has not only aroused attention of the public and the media, but also prompted increased academic debate and study on the subject.

School bullying, in its broadest sense, refers to harmful behavior on campus committed by teachers, students, or people from outside the school against any individual who violates social norms. School bullying is a term used to describe the physically and mentally harmful behaviors inflicted on students by their school peers or outsiders on campus or occasionally outside of school. School bullying is defined in Zhang's (2011) study as harmful behaviors among students or a student's long-term exposure to violence imposed by one or more schoolmates; it can take many forms, including physical, verbal, social, online, and sexual bullying on campus. Whatever definition you use, school bullying causes varying degrees of harm to students, families, and schools. Individually, it could cause severe physical and mental

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trauma to victims. Some of them may be beaten so severely by their classmates that they must be hospitalized for treatment; others may become mentally ill because of the constant fear; and still others may undergo irreversible personality changes. As a result, bullying victimization can have a significant negative impact on the bullied student's long-term development. When school bullies become addicted to violence, they may believe they are the "bosses" on their campus and end up as juvenile criminals. Bullying victimization incidents in schools disrupt normal school operations. When there is an incident of vicious school bullying, school leaders and teachers must devote a significant amount of time and energy to dealing with it. With the speed of the internet, once it's out there, it can spread quickly and hurt the school's reputation.

How to prevent and reduce bullying in schools has become a major topic in the educational world. Numerous nations have developed effective prevention techniques to combat this problem. Norway, for instance, implemented a zero-tolerance program for bullying and released the Anti-Bullying Declaration. Australia established a specific government institution to assist schools in addressing bullying victimization and annually observes "Anti-Bullying Day" on the third Friday of March. The United States and Japan have passed anti-bullying legislation to execute comprehensive anti-bullying tactics (Hu & Li, 2019). In the two 2017 sessions (the National People's Congress, NPC, and the Chinese People's Political Consultative Conference, CPPCC), legislators and deputies in China have introduced a series of motions on the prevention of school bullying, with a focus on optimizing the school moral education program, enacting specialized laws, adjusting the age of criminal responsibility, reinforcing punishment, and constructing a third-party coping mechanism (Zhang, 2017). These motions propose to: strengthen moral education and integrate it into intellectual education on a daily basis; maximize the school's monitoring coverage, as any hidden location on campus could be the site of bullying victimization; and coordinate the school security management and the public security management of the surrounding communities in order to improve the internal and external environment of the school and construct a bullying-free campus. In addition, it is underlined that parents should share responsibilities for the prevention and management of school bullying. They should embrace a democratic approach to parenting and set a good example for their children by exhibiting moral behavior. When children experience issues in their peer connections, parents should be available to talk with them and offer advice on how to develop harmonic and amicable relationships as well as how to defend themselves.

It is vital to understand the various elements impacting school bullying and bullying victimization through evidence-based inquiry to design appropriate preventative and intervention approaches. The *Influences of Teachers, Students, and School Climate on Bullying Victimization: Evidence from China* in this issue adds to the empirical experience by examining the relationship between bullying victimization and intervention factors like teacher support, students' sense of belonging, classroom disciplinary climate, and

cooperation and competition in the Chinese context using PISA 2018 China data and binary logit regression analyses (Zhu & Teng, 2022). According to the research, a student's sense of belonging significantly lessens the negative effects of bullying victimization; teacher emotional, informational, and instrumental support moderates school bullying; and a disciplinary, cooperative school environment is a strong support for anti-bullying initiatives. From an educational setting's point of view, it has implications for making bullying less harmful and coming up with different ways to help victims.

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**Correspondence to:**  
Longjun Zhou, Ph.D.  
Jiangsu Second Normal University  
Nanjing 211200  
Jiangsu  
China  
E-mail: E-mail: [294437034@qq.com](mailto:294437034@qq.com)  
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# Influences of Teachers, Students and School Climate on Bullying Victimization: Evidence from China

Ying Zhu,<sup>1,3</sup> Yiying Teng<sup>2,3</sup>

1. Shanghai Sanda University, Shanghai, China
2. Shanghai Zhongqiao Vocational and Technical University, Shanghai, China;
3. Chapman University, California, USA

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**Abstract:** *Given the common occurrence of school bullying incidents and high prevalence rates of victimization in China, this study aims to explore the association between multiple school-related predictors and Chinese adolescents' overall experiences with bullying victimization. Guided by the social-ecological framework for violence prevention, this study integrated different factors involving teachers, students, and school climate into one single research to detect the bullying problem more systematically and holistically. Further, the study applied the data from the 2018 Program for International Student Assessment while utilizing binary logistic regression analyses to perceive anti-bullying variables and their relationships with bullying victimization. The study revealed that teachers' emotional, instrumental, and informational support other than appraisal support were negatively associated with students' experiences of being bullied and victimized. The research also indicated that students' sense of belonging, a cooperative school environment, and classroom disciplinary climate played a buffering role in bullying victimization while competition in school settings adversely increased overall bullying exposure. The results have highlighted the integration of various predictors in influencing multiple social relations and school environments to battle against in-person bullying. The results also have implications for stopping cyberbullying to achieve inclusive school education for all in the post-COVID-19 era.*

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**About the Authors:** *Ying Zhu, Shanghai Sanda University, Shanghai, China; and Chapman University, California, USA. E-mail: [yinzhu@chapman.edu](mailto:yinzhu@chapman.edu)*

**Correspondence to:** *Yiyi Teng, Shanghai Zhongqiao Vocational and Technical University, Shanghai, China; and Chapman University, California, USA. E-mail: [yiteng@chapman.edu](mailto:yiteng@chapman.edu)*

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THE significance of bullying prevention and intervention has been well addressed in a series of initiatives taken by the Chinese government, including *The Guidance on the Prevention and Treatment of Bullying and School Violence* in 2016, *Comprehensive Plan on Strengthening the Management of Bullying among Primary and Middle School Students* in 2017, and the newly revised *Minor Protection Law* that took effect in 2021. However, school bullying still topped the agenda of this year's two plenary sessions of China's political bodies (2022 two sessions) and incidents of bullying victimization are often reported in media outlets. In one case, a teenager in Guangdong Province drowned after being slapped and knocked by peers in a restroom (Zuo, 2021); in another case, an adolescent from Anhui Province suffered from being bullied by a group of 12 schoolmates (China National Radio [CNR], 2022). These single incidents are just a tip of the iceberg and in fact, more instances of school bullying have surfaced with victimization constituting a major source of injuries (Li et al., 2020). Statistics from a national survey led by Central China Normal University has revealed that the proportion of students who had bullying experiences in 2019 and 2020 amounted to 32.4 percent (Zhao, 2021). Worse still, when classes were moved online due to the outbreak of the COVID-19 pandemic, cyberbullying (a form of bullying using the Internet) still persisted in China (Han et al., 2021). That is why legislators and deputies at the 2022 two sessions called on schools and communities to speed up the process of building a bullying-free, equitable, and inclusive campus for all. To achieve this goal, it is imperative for Chinese researchers and educators to identify intervention predictors pertaining to school violence and bullying victimization and work out detailed plans to reduce the incidence of bullying behaviors.

As for the factors predicting bullying victimization, teachers, students and school climate are generally regarded as three major components for assessing an engaging or a horrifying learning experience (e.g., Ahnert et al., 2012; Maxwell et al., 2017). Among them, teacher support (Flaspohler et al., 2009; Huang & Zhao, 2019), a fundamental need to belong (Underwood & Ehrenreich, 2014), a socially cooperative environment (Van Ryzin & Roseth, 2018a), and benign competition in one's immediate settings (Volk et al., 2015) have been respectively evidenced in previous bullying literature. Derived from classroom settings, management style or disciplinary climate is more associated with students' academic achievement (Sortkær & Reimer, 2018), but seldom mentioned to be directly linked to school bullying. Further, researchers' renewed attention to the fundamental relationships involving teachers, students, classroom settings, and school cultures could help to explain cyberbullying patterns during the COVID-19 pandemic (Vaillancourt

et al., 2021). But in the Chinese context, little has been known about the multiple school-related factors that jointly work on anti-bullying endeavors. Therefore, this empirical study aims to explore the association between the different facets of school learning and Chinese students' overall experiences with bullying victimization while controlling for such demographics as gender, age, student backgrounds, and grade repetition. Three overarching research questions have guided this exploration.

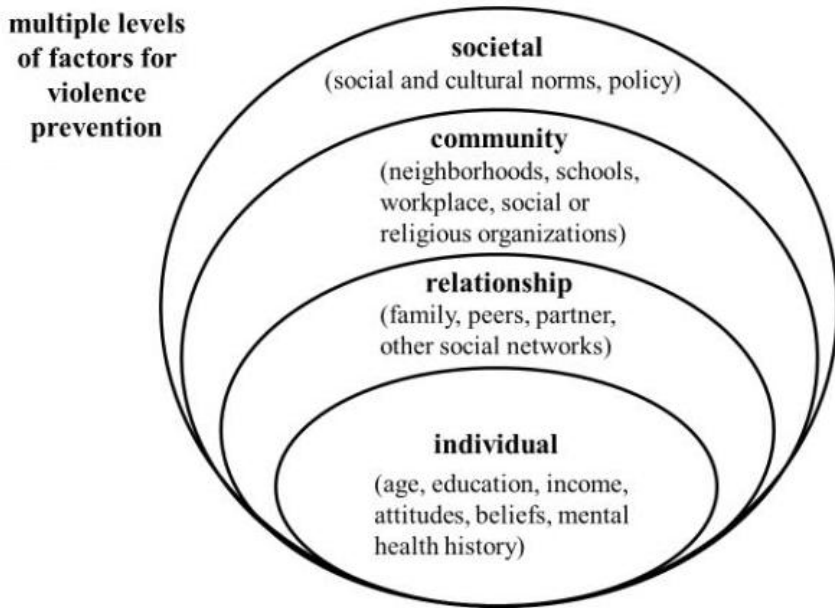
- (i) *How much variance in overall bullying experience is explained by school-related factors and demographics?*
- (ii) *Do school-related predictors have associations with high or low frequencies of bullying experiences?*
- (iii) *What intervention factors predict the likelihood of Chinese students' high or low exposure to bullying victimization?*

## **Literature Review**

### ***Theoretical Framework***

Guided by the social-ecological framework for violence prevention (CDC, 2004), this study addresses the complex interplay between individual, relationship, community, and societal factors in relation to bullying and bullying victimization. Originating from Bronfenbrenner's (1979) social-ecological model (SEM), this updated framework offers an ecological angle to "investigate the combined impact of social contexts and influences on behavioral development" (Swearer et al., 2010, p. 42).

As **Figure 1** shows, a range of factors work to alert people to the possible risks for experiencing or perpetrating violence while the overlapping circles indicate how one level of factors influences another and how different levels of factors coexist to function on the entire model. At the individual level, prevention strategies may involve personal attitudes, beliefs, or behaviors that prevent or stop violence. At relationship and community levels, a person's close connection to family members and active interaction with schools/workplaces/ neighborhoods may provide a pathway for risk reduction and violence prevention, including teacher-student interaction, positive peer relations, and reliable school/work environments. The final level (societal factors) features social and cultural norms that encourage or hamper violence. The following sections briefly introduce the variables that fall within this framework, which will form the basis of the bullying model to be tested in our empirical study and help to understand anti-bullying efforts over time and beyond human-level impact.



**Figure 1: Social-Ecological Model - A Framework for Prevention.**

*Note: Adapted from Centers for Disease Control and Prevention (p.5), 2004, CDC.*

## ***Teacher Support***

Students' healthy development cannot be sustained without the involvement of teachers, who provide support for, build trust in, and form close interpersonal relationships with students (e.g., Hughes et al., 2012; Quin et al., 2018; Ryan & Patrick, 2001; Wentzel et al., 2010). Moreover, such teacher-student relationships seem more collaborative rather than hierarchical (Schleicher, 2018). Tardy (1985) pointed out that teacher support as a form of social support was composed of four categories, namely emotional, instrumental, appraisal, and informational support. Emotional support is the type of teacher support that reflects love, concern, empathy, confidence, and patience; instrumental support refers to the substantial help passed on to the students in real need; appraisal support could be interpreted as the constructive feedback and appropriate evaluation system offered for students who will then know where and how to improve their learning behaviors; informational support is viewed as instruction, guidance, assistance, and counselling provided to help with students' problem-solving (Wentzel, 2016).

Previous literature has revealed that teacher support positively correlates with students' emotional and cognitive development (Quin, 2016; Quin et al., 2018) as well as with their interest in classroom activities (Lapointe et al., 2005) and their academic enjoyment (Ahmed et al., 2010; Ma et al., 2021). Despite much attention devoted to the connection between teacher support and academic performance, scholars have begun to realize the importance of anti-bullying efforts in the presence of teachers. Furlong and Chung (1995) early indicated in their empirical research that those non-victims are almost twice as likely as bullying victims to report the presence of a teacher to whom they can express their problems and pour out their feelings; other studies (e.g., Baik et al., 2019; Colarossi & Eccles, 2003; Mazzer & Rickwood, 2015) then emphasized the close relationship between teacher influences and students' well-being, which could further determine students' sense of security, problem behavior and victimization experience (Berkowitz & Benbenishty, 2012; McNeely & Falci, 2004). Besides, through analyzing the index of informational support, Huang and Zhao (2019) implied that teacher support could slightly mitigate bullying exposure, but they did not discuss the remaining three categories. Hence in this study, all four types of teacher support will be examined in relation to bullying victimization in China.

### ***Students' Sense of Belonging***

In educational settings, belonging is identified as the feeling of security, acceptance and inclusion a student connects to peers, teachers, and the school (Goodenow, 1993). Research shows that students' sense of belonging is closely linked to academic achievement (Wang & Eccles, 2012; Wang & Holcombe, 2010) and psychological adjustment (Lester et al., 2013; Loukas et al., 2016), and has sparked renewed concern for educators as a result of a high prevalence of bullying exposure (Duggins et al., 2016; Ma, 2003). Previous studies have suggested that the stronger a sense of belonging students have, the lower the level of bullying perpetration and victimization occurs (Goldweber et al., 2013; Raskauskas et al., 2010). Accordingly, we hypothesize that students' sense of belonging might play a buffering role in bullying victimization while influencing multiple relationships and different communities.

### ***Classroom Disciplinary Climate***

A major component of a positive classroom environment, disciplinary climate is provided when students listen to their teachers and peers attentively and focus only on their academic tasks without the interference of noise or

disorder (Moos, 1979). Three key elements characterize the variable: students' reverence for classroom rules as always, teachers' utmost responsibility for ensuring a favorable learning environment, and peers' disruptive-free behavior in the classroom (Cheema & Kitsantas, 2014; Matsumura et al., 2008). A positive disciplinary classroom secures more teaching and learning opportunities (Mostafa et al., 2018), better academic performance (Blank & Shavit, 2016), students' psychological wellbeing (Kim et al., 2021; Wang et al., 2020), and the efforts against bullying involvement (e.g., victimization and witnessing) (Kim et al., 2021). Additionally, an orderly, nondisruptive classroom can also facilitate students' sense of belonging (Organization for Economic Cooperation and Development [OECD], 2017) and benefit ethnic minorities and students in a disadvantaged position (Cheema & Kitsantas, 2014). In this research, we hypothesize that classroom disciplinary climate might predict bullying victimization while influencing various social relations.

### ***Cooperation and Competition***

Skills of cooperation is nurtured in an educational setting where students learn together (usually in small groups) to fulfill well-structured learning tasks and accomplish a well-defined learning goal (Van Ryzin & Roseth, 2019; Zook, 2018). If properly created, a cooperative learning environment brings about a high level of peer relatedness or peer relations (Roseth et al., 2008; Van Ryzin & Roseth, 2018a), which in turn promotes the attainment of learning goals (Johnson et al., 2014) as well as encourages positive feelings and supportive interactions. Ultimately, benign spiral emerges with the repetition of collaborative learning atmosphere and positive social interactions within the group (Deutsch, 1949, 1962). After class, students still have the opportunity to enhance their favorable peer relations by relating each individual's contribution to the performance of the entire group. This type of cooperation with an emphasis on social contact and skills benefits anti-bullying behaviors and helps to reduce bullying victimization (Van Ryzin & Roseth, 2019).

The opposite side of school learning is perceived as having a climate of competition, in which students compare one another or work against each other to obtain their academic or social benefits (e.g., excellent grades and admission to prestigious universities) (Johnson & Johnson, 1978; Volk et al., 2015). Views differ as to whether competition should be fostered in the learning process. One perspective considers competition as being supported by in-group distinctions, social hierarchy, and socioeconomic backgrounds and hence linked to increased bullying (Volk et al., 2015); another opinion

identifies competition as a catalyst for student engagement and students' competitive instincts (Anderson, 2006); a third perception regards competition as potentially feasible depending on different disciplines and educational levels (Chen & Chen, 2014; Vandercruysse et al., 2013). Whatever views prevail and whatever environmental attribute is outlined, students need to learn to create and bolster positive social relations while taking advantage of every factor in the learning community (e.g., teacher and peers) to achieve what is to be achieved (Johnson & Johnson, 1978; Gutiérrez-Braojos et al. 2019). In this study, we hypothesize that both cooperation and competition might work together to influence school violence and bullying victimization while affecting different relationships and school environments.

## ***Study Design***

Previous bullying-related literature has identified that in both Chinese and non-Chinese contexts, gender, grade repetition (or the practice of having students remain in the same grade without promotion), and economic, social and cultural status (ESCS) all closely correlate with bullying exposure and bullying victimization. Therefore, this study regards the above literature-supported predictors as student-level control variables (as they might confound the bullying model) and centers the underlying mechanism of the association between the fore mentioned school-related predictors and bullying victimization for Chinese adolescents. In line with the theoretical model and out of the urge to identify anti-bullying factors in the Chinese context, we proposed the following three hypotheses for the present study (see **Figure 2**).

H<sub>1</sub>: Teacher support (at the relationship level) significantly influences bullying victimization at school.

*H<sub>1-1</sub>: Emotional support significantly influences bullying victimization.*

*H<sub>1-2</sub>: Instrumental support significantly influences bullying victimization.*

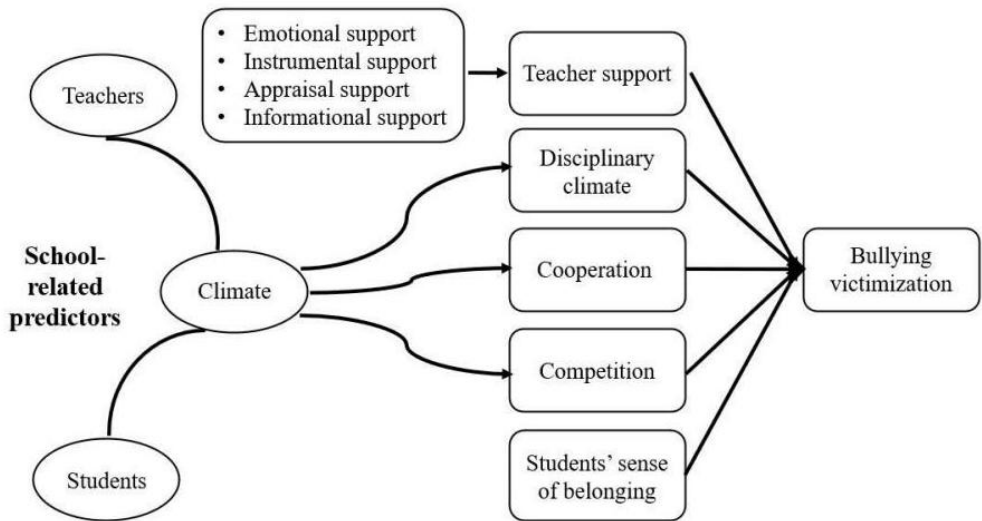
*H<sub>1-3</sub>: Appraisal support significantly influences bullying victimization.*

*H<sub>1-4</sub>: Informational support significantly influences bullying victimization.*

H<sub>2</sub>: Students' sense of belonging (at the community level) strongly predicts bullying victimization.

H<sub>3</sub>: School climate (at the community level) greatly affects bullying victimization while influencing various social relations.

*H<sub>3-1</sub>: Classroom disciplinary climate strongly predicts bullying victimization.*



**Figure 2: School-Related Predictors Hypothesized for Bullying Victimization.**

*H<sub>3.2</sub>: Cooperation greatly influences bullying victimization.*

*H<sub>3.3</sub>: Competition greatly influences bullying victimization.*

## Methods

### Sample

This study analyzed the publicly available dataset from the 2018 Program for International Student Assessment (PISA 2018) conducted by OECD in China's Beijing, Shanghai, Jiangsu, and Zhejiang provinces (B-S-J-Z, China). PISA, a triennial survey featuring 15-year-olds, measures to what extent they have obtained the critical knowledge and skills essential for active involvement in society. PISA 2018 adopted a stratified two-stage sampling procedure to select sample students. In the initial phase, schools were chosen through systematic probability proportional to size (PPS) sampling (OECD, 2019c). In the subsequent phase, 42 students were selected with equal probability within each sampled school. For schools with a required number of students fewer than 42, all 15-year-olds were singled out (OECD, 2019c). Ultimately, 12,058 adolescents were selected from 361 schools, among which 4306 (35.7%) came from lower-secondary schools, 5594 (46.4%) from upper secondary schools, and 2158 (17.9%) from vocational schools. As stipulated by PISA's international protocol (OECD, 2019b), PISA 2018

China data met the minimum requirements of the weighted response rate for selected schools within participating countries/regions (85%) and that for students from those selected schools (80%). Before data collection, informed consent was acquired from principals, teachers, parents, and students. The secondary data analyses of PISA 2018 would be crucial for this study as the large-scale survey through a careful sampling process reflected the real bullying situation in Chinese schools.

### ***Dependent Variable***

The dependent variable in PISA 2018 was measured from the perspective of the bullying victims (OECD, 2019a) and assessed by asking students to report how often they had experienced physical, verbal and social forms of school bullying during the past 12 months (see **Table 1**). Participants responded on a four-point Likert-type scale ranging from *1 = never or almost never* to *4 = once a week or more*. The corresponding items were then added up for the bullying scale with the internal consistency or reliability tested (Cronbach's  $\alpha = 0.843$ ).

### ***Demographic Variables***

Included in the demographic variables were such student background predictors as age, gender, grade repetition, and the ESCS index (see **Table 2**). Age, a continuous variable, spanned from 15.33 to 15.77 years old (mean = 15.77, SD = 0.29). Gender and grade repetition were all used as dummy variables with "0" for boys/no grade repetition and "1" for girls/grade repetition. The ESCS index, a weighted score rooted in PISA 2018, contained three family background variables, namely home possessions, parents' highest educational levels, and their highest occupational status (OECD, 2019c).

### ***Independent Variables***

All the independent variables (teacher support, students' sense of belonging, cooperation and competition, classroom disciplinary climate) in the study were directly derived from the PISA 2018 database (see **Table 3**). To ensure validity and reliability of the independent scales applied to this research, scaling procedures and construct validation of context questionnaire data were well documented in the dataset with the internal consistency (Cronbach's alpha) all exceeding 0.800 (Cronbach's  $\alpha > 0.800$ ) (OECD, 2019c).

Parallel with Tardy's (1985) and Wentzel's (2016) categorization of teacher support, this study applied four indices from PISA 2018: TEACHINT (rep-

**Table 1: Dependent Variable: Bullying Scale.**

Bullying Scale: 1 (never or almost never) to 4 (once a week or more)	1. Other students left me out of things on purpose.
	2. Other students made fun of me.
	3. I was threatened by other students.
	4. Other students took away or destroyed things that belonged to me.
	5. I got hit or pushed around by other students.
	6. Other students spread nasty rumors about me.

**Table 2: Descriptive Statistics for Demographic Variables.**

Continuous demographic variable(s)	Minimum	Maximum	Mean	SD	N	
Age (years)	15.33	16.25	15.77	0.29	12,058	
Categorical demographic variables	Variables	Frequency	%			
Gender	Female	5,775	47.9			
	Male	6,283	52.1			
	Grade Repetition	No	11,237	93.2		
		Yes	753	6.8		

**Table 3: Independent Variables and Scale Reliabilities.**

<b>Teacher Support</b>	Emotional Support (TEACHINT) Cronbach's $\alpha = 0.893$	It reflects teachers' love, concern, enthusiasm, and encouragement for students.
	Instrumental Support (DIRINS) Cronbach's $\alpha = 0.805$	It represents pedagogically tangible help (e.g., clear goals for learning, instructions, a short summary of the previous lesson, and checking questions on whether teaching has been understood) in student learning.
	Appraisal Support (PERFEED) Cronbach's $\alpha = 0.892$	It refers to the feedback on students' strengths in a subject, the areas that should be improved, and how the areas can be improved.
	Informational Support (TEACHSUP) Cronbach's $\alpha = 0.851$	It indicates guidance, assistance, and counseling provided to help students understand the subject.
<b>Sense of Belonging</b> Cronbach's $\alpha = 0.822$		It refers to students' perceptions of community connectedness and school inclusion.
<b>School Climate</b>	Disciplinary Climate in the Test Language Classroom (DISCLIMA) Cronbach's $\alpha = 0.892$	It measures order and discipline to be maintained in classroom settings.
	Perception of Cooperation (PERCOOP) Cronbach's $\alpha = 0.924$	It shows the environment where cooperation is addressed by students in target schools.
	Perception of Competition (PERCOMP) Cronbach's $\alpha = 0.829$	It refers to the environment where competitiveness is reported by students in target schools.

resenting emotional support), DIRINS (indicating instrumental support), PERFEED (reflecting appraisal support), and TEACHSUP (pointing to informational support). As for students' sense of belonging, the index naturally derived from the PISA data examined how easy it was for students to make friends at school, how they were welcomed or accepted by peers, and how they felt isolated or asocial in their community (Goodenow, 1993).

For school climate predictors in PISA 2018, disciplinary climate in the test language classroom (DISCLIMA), perception of cooperation (PERCOOP), and perception of competition (PERCOMP) were singled out for study. The disciplinary climate index described how orderly or disruptive the entire classroom environment appeared with higher values pertaining to positive climate appropriate for student learning and classroom communication. Meanwhile, the cooperation index asked respondents to assess if they value cooperation, collaborate with each other, and are encouraged to cooperate at school; the competition index required participants to report if they cherish competition and compete with each other in the school environment.

## Analytic Procedure

Because the dependent variable (the bullying scale) was not normally distributed, we split it into a dummy one (high and low frequencies of being bullied or victimized) in response to the research questions. Low frequency means that participants never or almost never experienced the listed forms of bullying events while high frequency indicates that respondents experienced at least one of the listed bullying events a few times a year or more (see **Table 4**). Further, inspired by previous logistic regression models used to understand Chinese students' perceptions of and experiences with an educational phenomenon (Allen, 2019), we conducted the research developing a stepwise binary logit model (Pallant, 2016). Utilizing SPSS software Version 28.0, the whole analytical process of data began with the entrance of demographic variables to create a predictive model (Model 1), which was followed by the addition of other variables of interest, namely the teacher-support model (Model 2), the sense-of-belonging model (Model 3), and the school-climate model (Model 4). The final model (Model 5) ended up with all the above predictors.

However, preliminary assumption tests revealed that for Models 3 and 4<sup>1</sup> (see *Appendix I*), the Hosmer and Lemeshow Goodness of Fit Tests were not passed (significance values all below 0.05), suggesting no support for these three models (Hosmer & Lemeshow, 2000). Hence, this study only concentrated on the other three models (i.e., Model 1: demographic model; Model 2: teacher-support model; Model 5: full-predictor model).

**Table 4: Descriptive Statistics for Categorical Dependent Variable(s).**

	Variables	Frequency	%
Bullying	Low	6,463	54.5
Scale	High	5,390	45.5

**Table 5: Logistic Regression Analysis of Demographic, Teacher-Support and Full-Predictor Models.**

Variables	Model 1 <sup>a</sup>			Model 2 <sup>b</sup>			Model 5 <sup>c</sup>		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
Gender	0.506 <sup>‡</sup>	0.037	1.658	0.524 <sup>‡</sup>	0.039	1.690	0.495 <sup>‡</sup>	0.040	1.640
Age	0.004	0.064	1.004	-0.104	0.066	0.901	-0.235 <sup>‡</sup>	0.069	0.791
Grade Repetition	0.245 <sup>†</sup>	0.078	1.278	0.264 <sup>‡</sup>	0.080	1.302	0.211 <sup>*</sup>	0.084	1.235
ESCS	-0.072 <sup>‡</sup>	0.017	0.930	-0.017	0.018	0.983	0.030	0.019	1.031
TEACHINT				-0.264 <sup>‡</sup>	0.025	0.768	-0.098 <sup>‡</sup>	0.027	0.907
DIRINS				-0.110 <sup>‡</sup>	0.025	0.896	-0.064 <sup>*</sup>	0.026	0.938
PERFEED				-0.022	0.024	0.978	0.30	0.025	1.031
TEACHSUP				-0.200 <sup>‡</sup>	0.028	0.819	-0.142 <sup>‡</sup>	0.030	0.867
BELONG							-0.454 <sup>‡</sup>	0.027	0.635
DISCLIMA							-0.311 <sup>‡</sup>	0.022	0.733
PERCOOP							-0.168 <sup>‡</sup>	0.023	0.846
PERCOMP							0.248 <sup>‡</sup>	0.022	1.281

Notes. <sup>\*</sup> $p < 0.05$ , <sup>†</sup> $p < 0.01$ , <sup>‡</sup> $p < 0.001$

<sup>a</sup> Demographic model, <sup>b</sup> Teacher-support model, <sup>c</sup> Full-predictor model

## Results

Through binary logistic regression analyses, this study explored the likelihood that Chinese adolescents were exposed to high or low frequencies of being bullied or victimized. For Model 1 using age, gender, grade repetition, and ESCS, the likelihood-ratio test produced a chi-square value of 16,101.62 and was statistically significant ( $p < 0.001$ ), indicating the logistic model was better than the null model without predictors. The chi-square value for the Hosmer-Lemeshow test was 11.07 with a significance level of 0.198 ( $p > 0.05$ ), suggesting the data fit the above model well (Hosmer & Lemeshow, 2000). The statistical significance ( $\chi^2(4, N = 11,847) = 224.125, p < 0.001$ ) of the demographic model implied that it was able to distinguish between respondents' high or low exposure to bullying experiences. Moreover, the

model as a whole explained 1.9% (Cox & Snell R square) and 2.5% (Nagelkerke R square) of the variance in the two bullying groups, and correctly classified 56% of the cases with a very small improvement of 1.5% in predictions. As presented in **Table 5**, three of the four demographic variables made a unique statistically significant contribution to the model (except for age,  $p > 0.05$ ). This meant that male students were more likely to be found in the high-level bullying groups than girls when controlling for other factors in the model. The strongest predictor of reporting the high-level bullying groups was gender, recording an odds ratio of 1.658. Likewise, the odds ratio of being in the high-level bullying groups was positively associated with grade repetition ( $p < 0.01$ ). For ESCS, its negative correlation with bullying exposure and bullying victimization was identified ( $p < 0.001$ ).

In Model 2 with all teacher-support predictors added to the demographics, the likelihood-ratio test and the Hosmer-Lemeshow test again identified the model as being worthwhile with the former yielding a  $\chi^2(8)$  of 15,498.97 ( $N = 11,081$ ,  $p < 0.001$ ) and the latter obtaining the chi-square value of  $\chi^2(8)$  of 9.67 ( $p > 0.05$ ). Moreover, able to distinguish between participants' high or low exposure to bullying behaviors ( $\chi^2(8, N = 11818) = 786.503$ ,  $p < 0.001$ ), the teacher-support model explained 6.4% (Cox & Snell R square) and 8.6% (Nagelkerke R square) of the variance in bullying groups, and correctly classified 61.2% of the cases with a modest improvement of 6.7% in predictions. As observed in **Table 5**, five of the eight predictors made a unique statistically significant contribution to the model (gender, grade repetition, TEACHSUP, DIRINS, TEACHINT). The two demographic variables (gender and grade repetition) of reporting the high-level bullying groups echoed those in Model 1, recording a slightly higher odds ratio of 1.690 and 1.302 respectively when compared with those in Model 1. Additionally, adolescents with more teacher support (TEACHINT, DIRINS, and TEACHSUP) were 0.768, 0.896, and 0.819 times less likely to be reported in the high-level bullying groups ( $p < 0.001$ ). This pointed to the fact that emotional, instrumental, and informational support all played a buffering role in bullying victimization with emotional support being most conducive to anti-bullying efforts. Thus, Hypothesis 1 was partially supported except for the role of appraisal support.

In the final model (Model 5) with all independent variables added, the likelihood-ratio test achieved a  $\chi^2(12)$  of 14,525.39 ( $N = 11,723$ ,  $p < 0.001$ ), suggesting that the model was better than the null model with all predictors removed. The Hosmer-Lemeshow test yielded a  $\chi^2(8)$  of 9.68 ( $p > 0.05$ ), indicating that the data fit the model well. The whole model again signified its ability to differentiate between respondents' high or low frequen-

cies of bullying exposure ( $\chi^2(8, N = 11,723) = 1,627.086, p < 0.001$ ). Moreover, the model as a whole explained 13% (Cox & Snell R square) and 17.3% (Nagelkerke R square) of the variance in bullying groups, and correctly classified 65.8% of the cases with a remarkable improvement of 11.2% in predictions. Ten of the 12 predictors made a unique statistically significant contribution to the model (gender, age, grade repetition, TEACHSUP, DIRINS, TEACHINT, DISCLIMA, PERCOMP, PERCOOP, and BELONG) except for ESCS and PERFEED ( $p > 0.05$ ). The two demographic variables (gender and grade repetition) of reporting the high-level bullying groups recorded a slightly lower odds ratio of 1.640 and 1.235 compared with those in Models 1 and 2. Statistically insignificant in the previous two models, age ( $p < 0.001$ ) this time witnessed a 0.791 likelihood increase in the high-level bullying groups. For the three forms of teacher support (TEACHINT, DIRINS, and TEACHSUP), they displayed similar patterns as were revealed in Model 2, reporting a mitigating effect on the high level of bullying exposure with instrumental support (DIRINS) replacing emotional support (TEACHINT) in Model 2 as the most effective form of teacher support for anti-bullying endeavors. Here in the full-predictor model, the first hypothesis was again basically supported. Regarding the newly added factors in the model, students with a strong sense of belonging, in a better disciplinary climate, and in a cooperative environment were respectively 0.733, 0.846, and 0.635 times less likely to be identified in the high-level bullying groups ( $p < 0.001$ ). On the contrary, students in the school settings that fostered competition among peers were 1.281 times more likely to report a high level of bullying victimization ( $p < 0.001$ ). Thus, Hypothesis 2 was fully supported while Hypothesis 3 only was partially supported.

## Discussion

Applying PISA 2018 China data and utilizing binary logit regression analyses, this study has added to the empirical experience by investigating the relationship between multiple intervention factors and bullying victimization involving teachers, students, and school climate in the Chinese context. From the perspective of student characteristics, male adolescents, grade repeaters (regardless of their gender), younger students, and low-income students/students from disadvantaged families are more likely to be bullied and victimized, as has been reported in a variety of Chinese literature (e.g., Ba et al., 2019; Huang & Zhao, 2019; Li et al., 2020; Lian et al., 2021; Yu & Zhao, 2021). In this sense, top priority needs to be given to the above types of students when intervention measures are introduced locally or nationwide.

Second, the research findings have verified that teacher support emotionally, informationally, and instrumentally moderates school bullying and bullying victimization. This could link teachers to their practical assistance and substantial help students can seek in case of bullying occurrence. Such support at the relationship level could extend beyond daily instructions provided for adolescents and penetrate further into almost every aspect of classroom learning, eventually benefiting multiple levels of influencing factors within the social-ecological framework. For example, student-perceived love, concern, enthusiasm, encouragement, and guidance are beneficial not only to students themselves, but to teacher-student communication channels, peers' recognition, positive school climate, and a set of core social values to be preserved. To minimize bullying exposure for all students, teachers are encouraged to treat students more fairly, evaluate their behavioral and mental progress more proactively, and offer timely support to those in academic difficulties and with life or socializing problems (Bosworth et al., 2018). However, appraisal support, identified as a teacher's feedback on students' strengths or weaknesses, is more directly associated with their behavioral engagement (Carvalho et al., 2020) and academic performance (e.g., Carvalho et al. 2014; Fyfe & Rittle-Johnson, 2016; Wei & Xie, 2017), thus requiring more empirical evidence to identify its possible correlation with bullying victimization.

Third, consistent with previous Chinese studies (Huang, 2020; Li et al., 2020), this research has illustrated that students' sense of belonging acts as an important buffer against the detriment of bullying victimization. This indicates that students' identification with and connectedness to a peer group or a school environment at the community level are viewed as major social resources to protect student learning against being hampered by school violence/bullying victimization (Adams & Hannum, 2018).

For school climate, the findings have demonstrated that a disciplinary, cooperative environment supported anti-bullying endeavors. Specifically, this study augments prior research on cooperative learning by showing that a cooperative environment reduces bullying victimization while promoting peer relatedness across the entire student population (Ryzin & Roseth, 2019). However, a socially competitive climate in this study tends to catalyze bullying victimization, urging schools and educators to reconsider the balanced relationship between cooperation and competition in bringing about student engagement and facilitating anti-bullying behaviors in school settings (OECD, 2019a). Besides, a positive school climate cannot be maintained without the participation of teachers, who help students cultivate such classroom habits as being friendly to and respectful for peers as well as becoming social, feeling inclusive, and fostering values that will form certain school

norms. The connectedness within the entire school system will in turn benefit teachers, students, and schools, and eventually bullying prevention and control efforts.

Therefore, a single bullying incident is interpreted not as an isolated phenomenon that probably causes victimization, but as the social behavior dynamically incorporated into an intricate network of interpersonal relationships, institutional factors, community contexts, and policy components. As is reflected in the socio-ecological framework, its interactive and reciprocal nature implies that individual behavior influences and is influenced by multiple levels of factors while shaping and being shaped by the socio-cultural environment (Salihu et al., 2015; Townsend & Foster, 2011). In this sense, to better understand students' bullying behaviors is not to split them from the larger social context—schools in which students acquire knowledge, communicate with teachers, get along with peers, develop egos, and gradually form the way a school culture is fostered or ruined. This may point to the necessity of creating improved school conditions for increasing anti-bullying awareness on campus and encouraging sustained behavioral change on bullies. The close contact between schools and individuals also promotes the building of a nonviolent campus and effectively supports the implementation of anti-bullying programs/policies.

## **Limitations**

Despite our focus on school-based factors in bullying victimization and the strength in integrating multiple predictors to address the issue holistically, there exist limitations in this study. First, at the individual and relationship levels, only student-perceived teacher support was taken into consideration, but in fact in the entire school community, the involvement of school administrators, principals, and other school leaders would never be ignored (Ministry of Education [MOE], 2021). Their active participation in building an appropriate school climate and use of process-oriented strategies (Bosworth et al., 2018) could exert a far-reaching impact on anti-bullying endeavors and reduction of victimization. Besides, this study only featured 15-year-olds in general in the test language classroom, but seldom explored the subcategories of this student body including those marginalized or at-risk groups who are prone to be bullied or victimized (e.g., students with disabilities and under-achieving students) (MOE, 2017, 2021). Hence, future studies can be realized in showing concern for special student groups as well as considering professionals (e.g., school counselors) and school leadership in the battle against bullying.

## **Implications**

The present study has provided implications for minimizing the impacts of bullying victimization and the development of different intervention measures from the perspective of school settings, especially in the context of Chinese schools. Theoretically, the research allows for the room to perceive school bullying and school violence as something complicated yet interconnected that springs from a combination of multiple influences upon individual behaviors. Thus, the interaction of various levels of factors for violence prevention could offer an effective mechanism for the understanding of how school bullying occurs and what to do with bullying before it begins. Empirically, the findings adds to the Chinese-based evidence of the association between school-based predictors and anti-bullying awareness. Since the enactment of the Comprehensive Plan on Strengthening the Management of Bullying among Primary and Middle School Students in 2017, great importance has been attached to anti-bullying education for all and bullying prevention before it develops (MOE, 2017). Based on the experience of anti-bullying legislation in other countries, China adheres to the principle of prevention as a primary concern and intervention as a top priority in an effort to push forward the establishment of an anti-bullying campus. Under such circumstances, this research regards a harmonious classroom climate and a positive school environment as the starting point to develop a sense of security, form social values (e.g., justice, unity, collaboration, and responsibility) amid cultivation of self-awareness, and eventually curb bullying behaviors on campus.

At the micro level, teachers play an indispensable part in teaching students what to learn and how to shape values as they spend a large proportion of time listening to adolescents' voices and building rapport (Schleicher, 2018). In this process, teachers' role in assisting the young to identify bullying behaviors and timely stop victimization cannot be taken no notice of. Noteworthy, imperative to bullying intervention is teacher training, which means teachers' skilled coping strategies relieve students' anxiety in confronting bullying and help to form appropriate management styles of classroom learning (Di Stasio et al., 2016). As suggested in the study, teacher training is feasible in promoting a sense of school belonging, improving classroom disciplinary climate, and balancing the skills of cooperation and competition. For school climate, our study points to all stakeholders who join the entire school community in creating a caring, inclusive atmosphere, not only teachers and student victims in the forefront of this anti-bullying battle. Also in climate building, our findings have recognized social comparison and intense competition as crucial characteristics that deserve educa-

tional practitioners' scrutiny and deliberation over their own teaching practices (Di Stasio et al., 2016).

However, the lingering impacts of the COVID-19 pandemic have made bullying patterns somewhat different. While strengthening online learning, the pandemic still secures cyberbullying as mentioned above. But the fact lies in that with the decrease in in-person bullying, cyberbullying follows a downward trend (Bacher-Hicks et al., 2021). This echoes previous evidence that cyberbullying rarely occurs independently of in-person bullying (Waasdorp & Bradshaw, 2015). In order to work out strategies for coping with cyberbullying, close attention would be paid to such fundamental relationships in educational reforms and anti-bullying attempts as teacher-student interactions, peer-to-peer relations, classroom environments and school cultures (Vaillancourt et al., 2021). Therefore, this study may provide a route to the understanding of cyberbullying in China that in a sense replicates the patterns of in-person bullying and bullying victimization. Although it is still pending to see how a positive classroom climate plays a role in adapting the bullied to the school life, the emphasis upon multiple relations within the school system offers an angle to propose intervention measures aimed at achieving equity and inclusivity for all schoolchildren in the post-COVID-19 era.

**Note:**

1. For the failed models (Model 3: the sense-of-belonging model and Model 4: the school-climate model), please refer to the online appendix for details.

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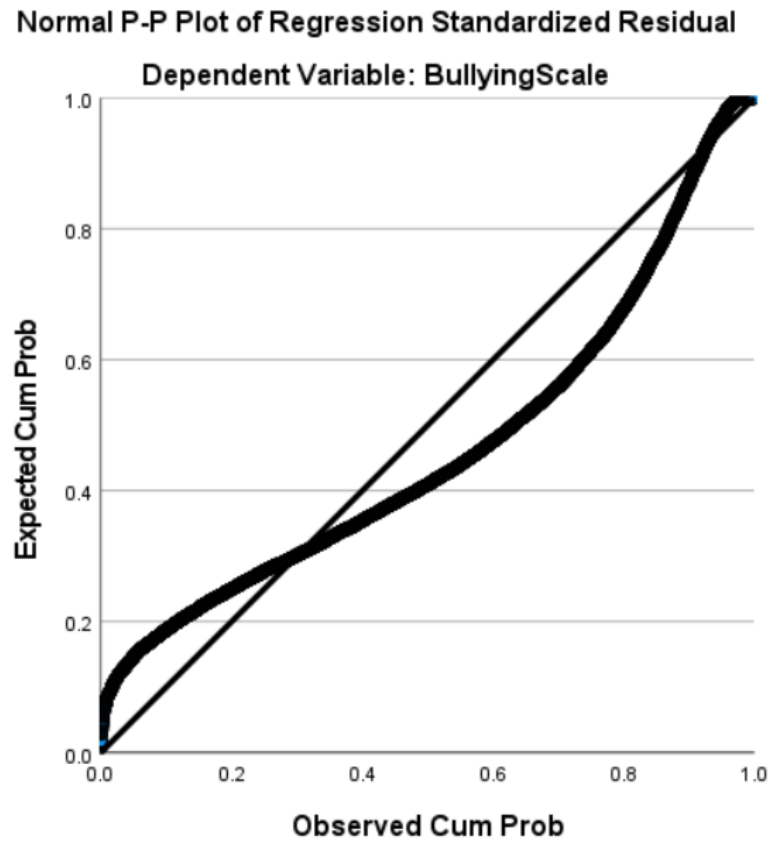
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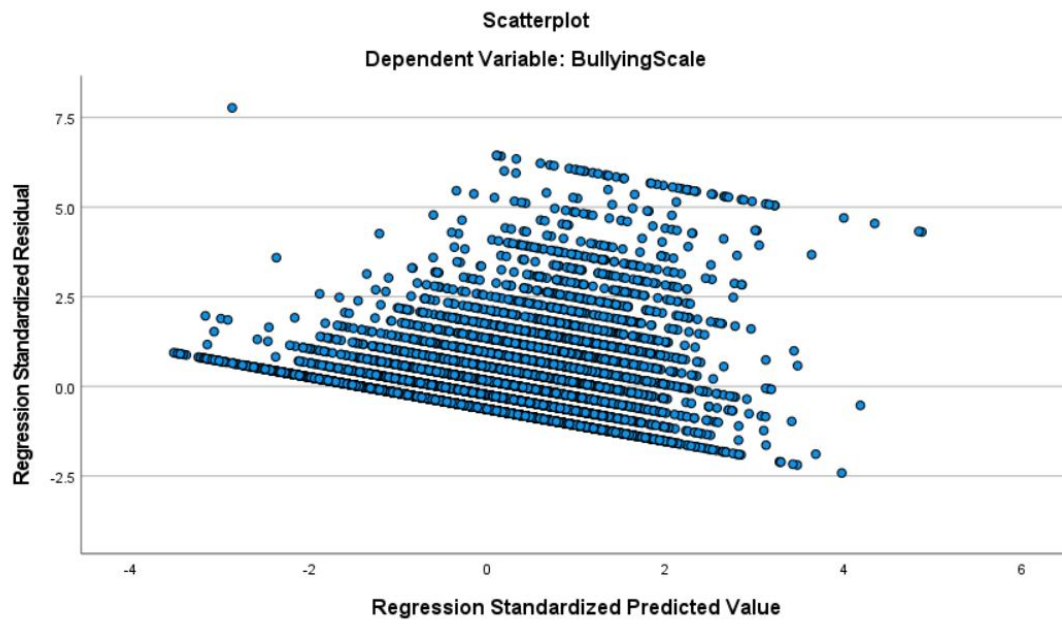
## Appendix I

**Figure S1. Normal P-P Plot of Regression Standardized Residual.**



*Note. The points did not lie in a reasonably straight diagonal line from bottom left to top right. This would suggest major deviations from normality and multiple regression analyses did not fit for statistics.*

**Figure S2. Scatterplot of Standardized Residuals.**



*Note. In the Scatterplot of the standardized residuals, the residuals appeared as a clear or systematic pattern, higher on one side than the other. This suggested that multiple regression analyses did not fit for statistics.*

**Table S1. Multiple Regression Analysis of Demographic, Teacher-support, Sense-of-belonging, School-climate, and Full-predictor Models.**

Variables	Model 1 <sup>a, b</sup>	Model 2	Model 3 <sup>c</sup>	Model 4 <sup>d</sup>	Model 5 <sup>e</sup>
	β	β	β	β	β
Gender	.169‡	.165‡	.178‡	.146‡	.149‡
Age	-.008	-.019‡	-.030‡	-.030‡	-.039‡
Grade Repetition	.048‡	.047‡	.043‡	.045‡	.039‡
ESCS	-.050‡	-.025†	-.012	-.016	.001
TEACHINT		-.113‡			-.016
DIRINS		-.019			.009
PERFEED		.017			.045‡
TEACHSUP		-.108‡			-.076‡
BELONG			-.283‡		-.215‡
DISCLIMA				-.208‡	-.169‡
PERCOOP				-.153‡	-.071‡
PERCOMP				.119‡	.112‡

Notes. \* $p < .05$ , † $p < .01$ , ‡ $p < .001$

<sup>a</sup> Demographic model, <sup>b</sup> Teacher-support model, <sup>c</sup> Sense-of-belonging model, <sup>d</sup> School-climate model, <sup>e</sup> Full-predictor model

**Table S2. Logistic Regression Analysis of Sense-of-belonging and School-climate Models.**

Variables	Model 3 <sup>a</sup>			Model 4 <sup>b</sup>		
	<i>B</i>	<i>S.E.</i>	<i>Exp(B)</i>	<i>B</i>	<i>S.E.</i>	<i>Exp(B)</i>
Gender	.568‡	.039	1.765	.457‡	.039	1.580
Age	-.136*	.066	.873	-.158*	.067	.854
Grade Repetition	.215†	.081	1.239	.238†	.082	1.269
ESCS	-.008	.018	.651	-.007	.019	.993
BELONG	-.640‡	.026	.527			
DISCLIMA				-.409‡	.020	.664
PERCOOP				-.344‡	.021	.709
PERCOMP				.246‡	.022	1.279

Notes. \* $p < .05$ , †  $p < .01$ , ‡  $p < .001$ ,

<sup>a</sup> Sense of Belonging, <sup>b</sup> School Climate

Preliminary assumption tests revealed that for Models 3 and 4, the Hosmer and Lemeshow Goodness of Fit Tests were not passed (significance values all below .05), suggesting no support for these two models.



# The Effects of Parent Educational Expectations on the Competence Development of Rural Left-Behind Children: An Empirical Study Based on CEPS Data

Tianxue Zhang, Heng Huang

College of Teacher Education, Zhejiang Normal University, Jinhua  
321004, Zhejiang, China

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**Abstract:** *Based on data from the China Education Panel Survey (CEPS), this study conducted an empirical analysis of the effect of parent educational expectations on the competence development of rural left-behind children and the underlying mediating mechanism. The research findings reveal that rural left-behind children have far less developed competencies than their non-left-behind counterparts and that parent educational expectations significantly and positively influence the competence development of left-behind children. Specifically, parent academic expectations impose the greatest impact on academic results of left-behind children; parent expectations of child education levels have the widest effects on various competencies of left-behind children; Parent involvement and teacher support exert a chain mediating effect on the relationship between parent educational expectations and the competence development of rural left-behind children. The mediation effect of teacher support or the concurrence of teacher support and parent involvement remarkably promoted the competence development of rural left-behind children, while parent involvement alone results in masking effects, which impede the improvement of their competencies to some extent.*

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**Keywords:** Rural Left-Behind Children, Competence Development, Parent Educational Expectations, Teacher Support, Parent involvement

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**Correspondence to:** Heng Huang, College of Teacher Education, Zhejiang Normal University, Jinhua 321004, Zhejiang, China. E-mail: [saintfreak4hh@zjnu.edu.cn](mailto:saintfreak4hh@zjnu.edu.cn)

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## Raising the Questions

Against the backdrop of the economic transformation and dualistic structure of urban and rural areas in China, a massive rural labor force has flowed to urban areas. The issue of rural left-behind children induced by the labor migration has become the focus of concerns of the government and the public. The announcement of the Opinions on Strengthening the Protection and Service for Rural Left-behind Children by the State Council in 2016 signaled that the issue has been incorporated in the state's policy framework. Over the years, as a result of the advancements of rural revitalization and poverty alleviation strategies, the scale of rural left-behind children has been gradually brought under control

The present study utilized the data from the China Education Panel Survey (CEPS) and adopted the perspectives of the neo human capital theory to address the following questions: Are there any significant differences in the competence development among rural children? Do parent educational expectations have substantial influences on the competence development of rural left-behind children? If yes, what is the influencing mechanism?

## Research Hypotheses

In this study, the competence of rural left-behind children is measured by three indicators: student academic results, cognitive ability, and non-cognitive ability. Parent educational expectations are classified into four categories: expectations of child academic achievements, education levels, future occupations, and future life, to facilitate the discussion on the relationship between “the great ambitions of lower class for their offspring” and the competence development of their left-behind children. We assume that there may be a chain mediation relationship between parent involvement and teacher support, which jointly work on the impact of parent educational expectations on the competence development of rural left-behind children. Hypotheses are proposed as follows:

*H1: Rural left-behind children have lower levels of competence, parent educational expectations, parent involvement, and teacher support than their non-left-behind counterparts.*

*H2: The four dimensions of parent educational expectations (expectations of child academic achievements, education levels, future occupations, and future life) can positively predict the competence development of rural left-behind children.*

*H3: Parent involvement mediates the relationship between parent educational expectations and the competence development of rural left-behind children.*

*H4: Teacher support mediates the relationship between parent educational expectations and the competence development of rural left-behind children.*

*H5: Parent involvement and teacher support have chain mediating effects on the relationship between parent educational expectations and the competence development of rural left-behind children.*

## Research Design

### *Data Sources*

This study drew on data from the CEPS conducted by the National Survey Research Center at Renmin University of China. Follow-up data was employed as the main body of sources whilst baseline survey data as supplements. A left-behind child was defined as the kid who cannot live with their parents because the parents (or one of them) are migrant workers but has to stay at their rural registered residence (Huji). 954 rural left-behind children and 2796 non-left-behind children were included in this study according to the types of Huji, locations of Huji, and living with parents or not.

### *Variables*

- *Predicted Variables*

Children's competence was examined in three dimensions: academic achievements, cognitive ability, and non-cognitive ability. Student academic achievements were represented by the results of standardized Chinese, mathematics, and English mid-term exams in 2013 (averaged by this study). Student cognitive ability was measured by a specialized test designed by the CEPS, which focused on student logical thinking and problem-solving ability rather than specific disciplinary knowledge taught by school curriculum. The CEPS's database could provide cognitive ability test scores of each student. Considering the data availability and qualities of rural left-behind children, this study measured their non-cognitive ability in four dimensions: self-regulation, self-efficacy, communication and interaction, emotional regulation. The scores from all question items under each dimension were aggregated and then averaged to obtain a composite value, which was converted into a dummy continuous variable. The higher the student scored for the four dimensions, the stronger their non-cognitive ability.

- *Explanatory Variables*

Parent expectations of child academic achievements, education levels, future occupations, and future life, the four major components of parent educational expectations, were explanatory variables in this study. Partial coding adjustments were made to these variables. The higher the scores of each variable, the greater parent educational expectations.

- *Mediating Variables*

Taking specific circumstances of migrant worker parents into consideration, this study looked at parent involvement from two aspects: instructions for child learning and concerns for child daily life. Teacher support was divided into academic, emotional, and social support.

- *Control Variables*

Demographic characteristics and family backgrounds are control variables in this study. Demographic variables include “gender” (0= male, 1= female) and “being the only-child or not” (0= Yes, 1= No); family background-related variables include the parent education level and family economic status.

## ***Analysis Paths***

Descriptive statistics were utilized to identify the differences in the competence development and parent educational expectations between rural left-behind children and their non-left-behind peers via Software Stata15.0. Additionally, the OLS multi-variable regression model was adopted to analyze the relationship between parent educational expectations and the competence development of rural left-behind children.

## **Empirical Analysis Results**

### ***The Results of Descriptive Statistics***

There were significant gaps in competencies between rural left-behind children and their non-left-behind peers; the latter outperform the former in academic achievements, cognitive ability, self-regulation, self-efficacy, communication and interaction, emotional regulation, etc. In addition, there were considerable disparities in most factors influencing student competence development between the two groups. Rural left-behind children experienced lower parent expectations of child education levels and future occupations than non-left-behind kids; they also scored less in variables such as parent involvement, teacher support, and family backgrounds. Thus, H1 was verified.

### ***The Influence of Parent Educational Expectations on the Competence Development of Left-behind Children***

Model 1 demonstrated that all the four dimensions of parent educational expectations significantly and positively affected academic results of left-behind children. In other words, the rise in parent educational expectations help improve academic performance of left-behind children. Judging by regression coefficients, parent academic expectations had the greatest impact on left-behind children’s academic results (10.723), followed by parent expectations of child future occupations (1.284) and life (0.194). Parent involvement negatively affected academic results of left-behind children, whereas teacher support positively influenced them. Model 2 illustrated that both parent expectations of child academic achievements and education levels had significant positive effects on cognitive ability of left-behind children; comparatively, the influence of parent expectations of child academic achievements (0.204) is greater. Parent involvement imposed considerable unfavorable impact on cognitive ability of left-behind children, while home economic status and parental education levels were positively correlated with child cognitive ability. Model 3 revealed that parent expectations of child academic achievements, education levels, and future occupations were significantly and positively correlated with left-behind children’s self-regulation, with parent expectations of

child academic achievements having the greatest influence (0.233), while the effect of parent expectations of child future life was of no statistical significance. Moreover, parent involvement and teacher support had remarkable positive impact on left-behind children's self-regulation. Left-behind children from impoverished families displayed stronger self-regulation in adversity. As per Model 4, parent expectations of child academic achievements and future life posed positive effects on left-behind children's self-efficacy, significant at 5% and 1% levels, respectively; comparatively, parent expectations of child future life had a greater effect (0.182). Teacher support was favorable for the cultivation of left-behind children's self-efficacy. Model 5 demonstrated that parent expectations of child education levels and future occupations positively influenced left-behind children's ability in communication and interaction, with a greater effect from parent expectations of child education levels (0.025). According to Model 6, parent expectations of child education levels and future life had positive impact on emotional regulation of left-behind children, effectively reducing the occurrence of their negative emotions and enhancing their self-regulatory ability in response to unfavorable emotions. In light of the analytical results, H2 was partially validated.

## ***Mediating Effects of Parent involvement and Teacher Support***

The proved relations between parent educational expectations, parent involvement, teacher support, left-behind children's competence, and other variables provided prerequisites for testing mediating effects. Based on the foregoing empirical results and research hypotheses, a chain mediation model was established with parent educational expectations as the exogenous variable and parent involvement, teacher support and left-behind children's competence as the endogenous variables, to test the mediating effects on the relationship between parent educational expectations and left-behind children's competence.

The test of mediating effects of parent involvement showed that in this path, the indirect effect value of the influence of parent educational expectations on left-behind children's competence was -0.127, and the 95% confidence interval did not contain 0, which denoted a significant mediating effect of parent involvement on the relationship between parent educational expectations and the competence development of left-behind children. Hence, H3 was corroborated.

The test of mediating effects of teacher support demonstrated that in this path, the indirect effect value of the influence of parent educational expectations on left-behind children's competence was 0.012, and the 95% confidence interval did not contain 0, which marked a significant mediating effect of teacher support on the relationship between parent educational expectations and the competence development of left-behind children. Thus, H4 was confirmed.

In the path of the joint mediating effect of parent involvement and teacher support, the indirect effect value of the influence of parent educational expectations on left-behind children's competence was 0.027, and the 95% confidence interval did not contain 0, indicating that there existed the chain mediating effects of parent involvement and teacher support and that H5 was supported.

A comparison of the effect sizes of the three paths revealed that parent involvement had the greatest mediating effect on the relation between parent educational expectations and left-behind children's competence and generated a certain level of masking effects. The chain mediating effects of parent involvement and teacher support turned out to be stronger than the mediating effect of teacher support alone.

## Conclusions

First off, rural left-behind children display a lower level of competence in all dimensions than their non-left-behind peers. Second, parent expectations of child academic achievements, education levels, future occupations, and future life are prominently and positively related to academic achievements, cognitive ability, and non-cognitive ability of left-behind children. Third, via the mediation of parent involvement and teacher support, parent educational expectations yield indirect effects on the competence development of left-behind children, aside from their direct influences. Lastly, previous research investigated the effects of parent involvement and teacher support on academic achievements, cognitive ability, and non-cognitive ability separately, whereas the current study found that there is a chain relation between the two variables, which jointly work on the competence development of rural left-behind children.

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# The Relationship between Mobile Phone Dependence and Mental Health among Adolescents: The Mediating Role of Academic Burnout and the Moderating Role of Coping Styles

Anming He,<sup>1</sup> Jiaojiao Wan,<sup>2</sup> Qiuping Hui<sup>1</sup>

1. School of Education Science, Xinyang Normal University, Xinyang 464000, Henan, China
2. School of Education Science, Henan University, Kaifeng 475004, Henan, China

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**Abstract:** To investigate the relationships between adolescent mental health and mobile phone dependence (MPD), academic burnout, and coping styles as well as the underlying mechanisms, this study surveyed 1191 adolescents, using the mobile phone dependence indicator scale, adolescent academic burnout questionnaire, simplified coping style questionnaire, and SCI-90 self-report mental symptom inventory. The analysis results by structural equation modeling techniques are that: (i) MPD is a significant negative predictor of adolescent mental health; (ii) Academic burnout partially mediates the relationship between MPD and adolescent mental health; (iii) Negative coping styles moderate the second half of the mediating path; the mediating effect was more significant among adolescents with higher levels of negative coping than those with lower levels of negative coping. The findings of this study offer implications for the protection and promotion of adolescent mental health in the mobile internet era.

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**Keywords:** *Mobile Phone Dependence, Academic Burnout, Coping Style, Mental Health, Adolescents*

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**Correspondence to:** *Jiaojiao Wan, School of Education Science, Henan University, Kaifeng 475004, Henan, China.*  
*E-mail: [1060581865@qq.com](mailto:1060581865@qq.com)*

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## **Introduction**

Mobile phone dependence (MPD), also referred to as cellular phone addiction and the problematic mobile phone use, is the individuals' overindulgence in mobile phone-related activities which causes strong, persistent cravings for the use of them and consequently, significant impairment in users' social and psychological functions. The lowered level of mental health is one of the most salient negative ramifications brought by mobile phones to adolescents. The MPD-induced reclusiveness hinders the fulfilling of human needs for interpersonal communication, belonging, and self-actualization, which leads to detrimental emotions of adolescents such as senses of inferiority and loneliness.

Academic burnout is a prolonged, negative state of mind related to students' learning, represented by emotional exhaustion, academic apathy, and reduced sense of achievement. Previous studies also found that intense mobile phone users are more likely to be distracted, a mental status unfavorable to learning, and that students with high levels of MPD are more prone to academic procrastination and weariness. Hence, we posit that MPD can positively predict adolescent academic burnout.

In addition, academic burnout may be harmful to adolescent mental health. Academic burnout is a form of consumption and loss of mental resources in learning, and the lack of resources can lead to difficulties of adaptation. Teenager mental health is a typical issue of adaptation in adolescence. Therefore, the more severe the academic burnout, the lower the level of mental health of the teenager. We hypothesize that academic burnout may play a mediating role in the relationship between MPD and teenager mental health.

According to diathesis - stress theories, individuals' coping styles pose important influences on their mental health. Scholars discovered that in contexts of risks, protective coping responses could buffer the negative impact on mental health, while disengagement coping could intensify the negative influence on mental health. Thus, it is very likely that coping styles can moderate the effect of risk factors on adolescent mental health. Hence, a hypothesis is proposed that coping styles moderate the direct effect of MPD on adolescent mental health and the second half of the path of the indirect influence of MPD on teenager mental health mediated by academic burnout.

To sum up, based on relevant theories and existing empirical findings, the present study established a moderated mediation model to examine the effects of MPD, academic burnout, and coping responses on adolescent mental health. Data of the big sample of 1191 adolescents were employed to investigate the mediating and moderating mechanisms of the influence of MPD on teenager mental health, the mediating role of academic burnout, and the moderating role of coping styles in the chain of mediation, in an effort to provide evidence-based theoretical guidelines for the prevention of and intervention in adolescent mental problems in the mobile phone era.

## **Research Methods**

### ***Subjects***

The survey was conducted on the cohort of 11- to 25-year-olds. Cluster random sampling was adopted to select entire classes of students from 8 colleges in Heilongjiang, Tianjin, Shandong, Henan, and Jiangxi Provinces on the principle of equivalence of liberal arts, sciences, and arts. Junior secondary students from two middle schools and senior secondary students from two high schools in Henan Province were also recruited in classes based on the social-natural sciences equivalence and grade balance. A total of 1300 teenagers participated in the questionnaire survey, and 1191 valid questionnaires (91.62% validity rate) were obtained with 602 ones from boys (50.5%) and 589 ones from girls (49.5%).

## ***Research Tools***

- The Mobile Phone Dependence Indicator Scale. It includes four dimensions: losing control, anxiety/craving, withdrawal/escape, and productivity loss, with a Cronbach's  $\alpha$  coefficient of 0.88 in this study.
- The Self-report Mental Symptom Scale. It encompasses ten categories of symptoms such as somatization, obsessive-compulsive, over-sensitivity, depression, anxiety, hostility, phobia, paranoid, psychotic disorder, and others, with a Cronbach's  $\alpha$  coefficient of 0.88 in this study. The higher the scores one obtained from this scale, the worse their mental state was.
- The Simplified Coping Style Questionnaire. This is a questionnaire adapted to the demographic characteristics of China, with Cronbach's  $\alpha$  coefficient of 0.814 for the entire scale, 0.84 for the positive coping style (i.e. engagement coping) scale, and 0.74 for the negative coping style (i.e. disengagement coping) scale in this study.
- The Adolescent Academic Burnout Questionnaire. It includes three dimensions: physical and mental exhaustion, cynicism, and low self-efficacy, with a Cronbach's  $\alpha$  coefficient of 0.73 in this study.

## ***Data Processing***

Data were evaluated by the common method bias test, descriptive statistical analysis, and other relevant analyses via software SPSS 20.0, and the structural equation model-based analysis was utilized to test the validity of the moderated mediation model through software Amos 23.0.

## **Research Results**

### ***The Common Method Bias Test***

The common method bias test results showed that there were 13 factors with characteristic roots above 1, and that the first factor could explain 25.31% of the total variation, less than the 40% critical value, indicating there was not a significant common method bias.

## ***Relations between Adolescent MPD, Academic Burnout, Coping Styles, and Mental Health***

MPD were significantly and positively correlated with adolescent academic burnout, disengagement coping, and scores in mental health, but not related with engagement coping. Scores in mental health were positively correlated with academic burnout, disengagement coping, but negatively related to engagement coping. Academic burnout was negatively correlated with engagement coping, while positively related to disengagement coping.

### ***The Test of the Moderated Mediating Effect with Disengagement Coping as the Moderator Variable***

The test results of the moderated mediation model by structural equation modeling techniques showed that disengagement coping significantly moderated the relationship between adolescent academic burnout and mental health ( $\beta = 0.07$ ,  $p < 0.001$ ), but had no moderating effect on the relationship between MPD and adolescent mental health ( $\beta = 0.03$ ,  $p > 0.05$ ). For teenagers with high levels of disengagement coping, their scores from the mental health scale considerably increased with exacerbated academic burnout ( $\beta = 0.48$ ,  $t = 10.82$ ,  $p < 0.001$ ); it was also true among teenagers with low levels of disengagement coping, but the speed of increase significantly slowed down ( $\beta = 0.27$ ,  $t = 5.99$ ,  $p < 0.001$ ;  $\beta = 0.48$  was decreased to  $\beta = 0.27$ ).

### ***The Test of the Moderated Mediating Effect with Engagement Coping as the Moderator Variable***

Engagement coping did not show prominent moderating effects on the relationships between MPD, academic burnout, and mental health ( $\beta = -0.03$ ,  $0.00$ ,  $p > 0.05$  both). That means engagement coping did not moderate the influence of MPD on adolescent mental health.

## **Discussion**

### ***The Mediating Role of Academic Burnout***

This study discovered that MPD could positively predict academic burnout, which is consistent with the findings of previous research on academic burnout. At the same time, it was found that academic burnout could significantly predict teenager mental health, which supports resource conservation theories that contend one's adaptiveness is closely related to their possession of resources. More importantly, it was confirmed that academic burnout partially mediated the relationship between MPD and adolescent mental health; MPD could not only directly influence adolescent mental health, but also indirectly affect it via academic burnout. The introduction of the variable of academic

burnout helps explain the pathway through which addictive behaviors like MPD affect adolescent mental health.

## ***The Moderating Role of Coping Styles***

The moderated mediation model in this study was used to examine the moderating effects of coping styles on the mediation chain of “MPD→ academic burnout→ mental health”. It was found that disengagement coping had significant moderating effects on this mediation chain and that it can moderate the second half of the path of the influence of MPD on adolescent mental health through the mediation of academic burnout. Academic burnout can more effectively predict the mental health of adolescents with higher levels of disengagement coping than that of those with lower levels of disengagement coping. In other words, high levels of disengagement coping, can considerably aggravate the negative impact of academic burnout on adolescent mental health. It implies that teenagers with higher levels of academic burnout and disengagement coping are of high risk of mental problems. As opposed to the initial hypothesis, engagement coping did not exhibit any moderating effects.

There is an interactive relationship between academic burnout and coping styles. Academic burnout imposes a particularly strong influence on mental health and social adaptation of adolescents with higher levels of disengagement coping. Lower levels of disengagement coping have a more significant protective effect on teenagers with academic burnout. Although young mobile phone addicts are more prone to academic burnout, early intervention in childhood can effectively reduce the possibility of MPD and academic burnout. Moreover, coping skills of adolescents are somewhat malleable through intervention programs like group counseling. Teenagers are at a key phase of education. Compared with MPD, problems in education should be more serious risk factors; academic burnout can negatively affect any individual suffering from this problem, no matter how seldom they use disengagement coping strategies.

## **Conclusions**

(i) Adolescent mental health is closely related to MPD, academic burnout, and coping styles. (ii) Both MPD and academic burnout can predict teenager mental health. In addition to its direct effect on teenager mental health, MPD can indirectly affect it through the mediation of academic burnout. (iii) The indirect effect of MPD on adolescent mental health via the mediation of academic burnout is significantly moderated by negative coping styles. The indirect effect of MPD is more prominent among adolescents with higher levels of disengagement coping than their peers with lower levels of disengagement coping.

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# A Meta-analysis of the Relationships between Chinese Parenting Styles and Child Academic Achievement

Yuntian Xie,<sup>1,2</sup> Zifu Shi,<sup>1</sup> Lin Yin,<sup>1</sup> Luo Lan<sup>1</sup>

1. Cognition and Human Behavior Key Laboratory of Hunan Province, Department of Psychology, Hunan Normal University, Changsha 410081, Hunan, China
2. Department of Applied Psychology, Changsha Normal University, Changsha 410100, Hunan, China

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**Abstract:** This article aimed to examine the relationships between Chinese parenting styles and child academic achievement through a meta-analytical review. After literature screening, 54 studies and 793 independent effect sizes that met the inclusion criteria were incorporated into the analysis ( $n = 24630$ ). According to the results of the study, positive parenting styles like “emotional warmth and understanding” had prominent beneficial effects on child academic achievement, whilst negative ones such as “punishment and harshness”, “overinvolvement and overprotection”, “preference for the subject”, “rejection and denial”) were significantly unfavorable for child academic performance. In addition, the relation between parental overinvolvement and overprotection and child academic achievement was moderated by parental roles. Children’s ages could moderate the relationships between parenting styles (except for overinvolvement and overprotection) and child academic results. The connection between parental preference for the subject and child academic achievement was moderated by disciplines. The effects of parents’ emotional warmth and understanding as well as overinvolvement and overprotection were moderated by times.

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**Correspondence to:** Zifu Shi, Cognition and Human Behavior Key Laboratory of Hunan Province, Department of Psychology, Hunan Normal University, Changsha 410081, Hunan, China. E-mail: [shizf@hunnu.edu.cn](mailto:shizf@hunnu.edu.cn)

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## Research Aims and Hypotheses

The present study proposed two hypotheses. H1: Child academic achievement is closely correlated with parenting styles in China. H2: Parental roles, children's ages, disciplines, and times can moderate the relation between parenting styles and child academic performance. Additionally, given that parents and children's understanding of parenting styles differ in varying cultural contexts, this study attempted to use meta-analysis to examine the relationships between parenting styles and child academic results as well as the factors influencing them against the backdrop of Chinese culture.

## Methodology

### *Literature Retrieval*

The present study included literature published both in Chinese and English. Chinese terms for "parenting styles" and "academic achievement" were used to search for studies in CNKI (China National Knowledge Infrastructure) Journal, Doctoral Dissertations, and Masters' Theses Databases, China Science and Technology Journal Database, and Wanfang Database. Studies in English were identified by searching under keywords "parenting style", "academic achievement" (or "academic performance"), and "Chinese" (or "China") in EBSCO, Science Direct, and Springer LINK. As Chinese version of EMBU (a parenting style assessment scale) was revised in 1993, we retrieved articles published between January 1993 and December 2018 from May the 26th of 2019 to June the 28th of 2019.

### *Inclusion Criteria*

- I. Studies included must be empirical research with complete data and specified sample sizes.
- II. Subjects are from China; Data related to Chinese parenting styles and student academic results must be provided if the sample is a mixture of Chinese and foreign subjects.
- III. The use of Chinese version of EMBU as a measurement tool must be clearly stated.
- IV. Academic achievement refers to results of Chinese, mathematics, English and other subjects. Studies using student academic achievement scales are excluded.
- V. Focusing on the relationships between parenting styles and child academic achievement, the study must report r value or F value, t value and X<sup>2</sup> value that can be converted to r value.
- VI. As a result, 54 studies with 793 independent samples (n=24,630) were included in the meta-analysis.

### *Coding of Literature Characteristics*

The basic information of included studies entailed authors, publication time, sample sizes, subjects' education levels, subjects' parents, disciplines, etc. Data from each ef-

fect size was reported only once to ensure the independence of effect sizes. An independent sample was coded only once; if a study contained more than one independent samples, then they would be coded separately. The majority of the studies employed the standard Chinese version of EMBU, although a few of them used the simplified version. In terms of the collection time of the research data, in case of not being reported in the study, it was assumed two years after the publication time of the study. Thus, this analysis covered a time range from 1997 to 2016, which was divided into two phases with phase one from 1997 to 2006 and phase two from 2007 to 2016, according to the two key points (1997 and 2007) in the Five-Year Plan of China Home Education Work.

## ***Processes of the Meta-Analysis***

First, effect sizes were calculated with Pearson product-moment correlation coefficient  $r$  meta-analysis method.  $r$  value was converted by Fisher  $Z$  and used to compute the weight of effect sizes and the 95% confidence interval.  $\tau^2$  was treated as an indicator of the heterogeneity of effect sizes. The present study used  $Q$ -statistic to test the significance of  $\tau^2$ .

Second, whether to choose the fixed-effects or random-effects model depended on our projections of effect sizes of included studies and analytical aims. In current study, subjects included pre-school children, primary and secondary students, residing in urban or rural areas; the tools used to measure parenting styles were not identical. Hence, this study adopted the random-effects model to compute effect sizes while applied the fixed-effects model to the analysis of moderating variables.

Lastly, the fail-safe number ( $N_{fs}$ ), trim-and-fill method, and contour-enhanced funnel plot were employed to test the publication bias. The higher the  $N_{fs}$ , the less likelihood of publication bias. When  $N_{fs}$  is less than  $5k + 10$ , the effect of publication bias is big enough to be attended to.

## **Analysis Results**

### ***The Test of Main Effects***

According to the test results of main effects of parenting styles on child academic achievement, there is a strong and positive correlation between parental emotional warmth and understanding and child academic performance ( $r = 0.18$ , 95% CI [0.17, 0.20]); parental punishment and harshness were inversely connected to child academic results ( $r = -0.12$ , 95% CI [-0.14, -0.11]); parental overinvolvement and overprotection negatively predicted child academic performance ( $r = -0.05$ , 95% CI [-0.06, -0.04]); parental preference for the subject had a significant unfavorable influence on child academic achievement ( $r = -0.06$ , 95% CI [-0.08, -0.04]); parental rejection and denial had strong and negative impact on child academic performance ( $r = -0.12$ , 95% CI [-0.13, -0.10]). In summary, positive parenting styles like emotional warmth and understanding are significantly beneficial for kid academic achievement, while negative ones such as parental punishment and harshness, overinvolvement and overprotection, preference for the subject, rejection and denial are detrimental to child academic results.

## ***The Test of Moderating Effects***

### **Moderating Effects of Parental Roles**

Parental roles significantly moderated the relationship between overinvolvement and overprotection and kid academic achievement (Q-between = 4.00,  $df = 1$ ,  $p < 0.05$ ), with the father's effect being remarkably greater than the mothers. Nevertheless, parental roles did not display prominent moderating effects on the relationship between other parenting styles and child academic performance, with Q-between = 1.01,  $df = 1$ ,  $p = 0.32$  for the relationship between emotional warmth and understanding and child academic results, Q-between = 0.03,  $df = 1$ ,  $p = 0.86$  for that between parental punishment and harshness and kid academic achievement, Q-between = 0.25,  $df = 1$ ,  $p = 0.62$  for that between parental preference for the subject and child academic results, and Q-between = 0.83,  $df = 1$ ,  $p = 0.36$  for that between parental rejection and denial and kid academic outcomes.

### **The Moderating Effects of Children's Ages**

Children's ages imposed pronounced moderating effects on the relationships between parenting styles (except for overinvolvement and overprotection) and child academic achievement. Specifically, children's ages significantly moderated the relationship between parental emotional warmth and understanding and child academic performance (Q-between = 55.24,  $df = 4$ ,  $p < 0.001$ ), and that between parental punishment and harshness and kid academic results (Q-between = 96.74,  $df = 4$ ,  $p < 0.001$ ), with the strongest effects at the kindergarten age, followed by primary and junior secondary school ages, and with the weakest effects at senior secondary and secondary school ages. The primary school age most powerfully moderated the relationship between parental preference for the subject and child academic performance (Q-between = 13.85,  $df = 4$ ,  $p < 0.01$ ), while the junior and senior secondary school ages had the slightest moderating effects. On the relationship between parental rejection and denial and kid academic achievement (Q-between = 90.49,  $df = 4$ ,  $p < 0.001$ ), the kindergarten age had the most significant moderating effect whilst the secondary school age had the weakest one.

### **The Moderating Effects of Disciplines**

Disciplines significantly moderated the relationship between parental preference for the subject and child academic performance (Q-between = 8.57,  $df = 2$ ,  $p < 0.05$ ), with Chinese imposing the greatest effect, followed by mathematics and English. However, the moderating effects of disciplines on the relationships between other parenting styles and child academic achievement were not significant, with Q-between = 1.56,  $df = 2$ ,  $p = 0.46$  for the relationship between parental emotional warmth and understanding and child academic results, Q-between = 1.13,  $df = 2$ ,  $p = 0.57$  for the relationship between parental punishment and harshness and kid academic performance, Q-between = 0.84,  $df = 2$ ,  $p = 0.66$  for the relationship between parental overinvolvement and overprotection and child academic achievement, Q-between = 0.34,  $df = 2$ ,  $p = 0.85$  for the relationship between parental rejection and denial and kid academic results.

## The Moderating Effects of Times

The moderating effects of times were not significant on the relationships between parental punishment and harshness and child academic achievement (Q-between = 2.38,  $df = 1$ ,  $p = 0.12$ ), between parental preference for the subject and child academic performance (Q-between = 1.54,  $df = 1$ ,  $p = 0.22$ ), and between parental rejection and denial and kid academic results (Q-between = 0.76,  $df = 1$ ,  $p = 0.39$ ), whereas they were significant or marginally significant on those between the other two parenting styles and kid academic achievement. To be specific, the moderating effect of phase two was remarkably stronger than that of phase one on the relationship between parental emotional warmth and understanding and child academic performance (Q-between = 9.89,  $df = 1$ ,  $p < 0.01$ ), and the positive correlation between them was strengthened in phase two. The moderating effect of phase one was substantially stronger than that of phase two on the relationship between parental overinvolvement and overprotection and kid academic results (Q-between = 2.82,  $df = 1$ ,  $p = 0.09$ ), and the negative correlation between them was weakened in the second phase.

## Conclusions and Discussion

### *The Relationship between Parenting Styles and Child Academic Achievement*

Based on the existing 54 studies and 793 independent samples, this meta-analysis found that there were significant correlations between the five parenting styles and child academic achievement. This conclusion validates H1 and is consistent with the results of a previous literature review that analyzed 39 studies. In addition, different from another meta-analysis conducted by foreign scholars which focused on the relations between authoritarian, authoritative, permissive, and neglectful parenting styles and academic achievement of subjects in Western countries, the present study drew on five parenting styles (emotional warmth and understanding, punishment and harshness, overinvolvement and overprotection, preference for the subject, rejection and denial) listed in EMBU to examine their relationships with child academic performance in the context of Chinese culture. There were differences in parenting styles cited and the cultural backgrounds of samples between the two meta-analytical studies, but interestingly, both discovered that the degree of correlation between parenting styles and child academic achievement was not very high, with a correlation coefficient of  $-0.12 - 0.18$  found in the present study and a correlation coefficient of  $-0.16 - 0.17$  in the other one.

Different parenting styles yields distinct influences. The favorable effects of positive parenting styles and detrimental influences of negative ones on kid academic achievement found by the current study are aligned with the results of existent research and support the argument of the human ecology development theory. Moreover, it is discovered that parental emotional warmth and understanding has the most salient effect on child academic performance, which highlights the importance of emotional warmth and understanding to children's growth. Besides, the coefficients of correlations be-

tween child academic results and parental punishment and harshness as well as rejection and denial are relatively large.

## ***The Moderating Effects of Parental Roles, Children's ages, Disciplines, and Times***

First off, as per the analysis results, parental roles cannot significantly moderate the relationships between most of the parenting styles and child academic achievement. However, on the relationship of parental overinvolvement and overprotection and child academic performance, the moderate effect of the father is considerably greater than that of the mother. Second, ages can effectively moderate the relationships between most of the parenting styles and child academic results. Parenting styles are more closely related to child academic performance at the primary level, whilst less at the secondary level. Third, disciplines impose a significant moderating effect on the relationship between parental preference for the subject and kid academic achievement. Lastly, as times advance, the favorable effect of the positive parenting style (emotional warmth and understanding) on child academic performance strengthens, while the detrimental effect of negative parenting styles like overinvolvement and overprotection is mitigated.

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NEWSLETTER

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## **Will Internet Use Increase Farmers' Household Investment in Education? Micro Evidence from CHFS2019**

*By Cui, B. Y. & Cheng, Y. Q.*

*Correspondence to: Baoyu Cui, School of Economics, Anhui University, China.*

*E-mail: [cbv00662003@aliyun.com](mailto:cbv00662003@aliyun.com)*

**P**UBLISHED in *Agricultural Technology Economics*, this study examines the impact of Internet use on rural households' investment in child education and its mechanism, using data from China Household Finance Survey data 2019 (CHFS2019). The results of the study are as follows:

- The benchmark regression reveals that the positive effect of Internet use on rural education outweighs the negative impact, and that the Internet use can significantly increase the farmers' investment in child education.
- The heterogeneity effect analysis indicates that for the Internet use plays a greater positive role in boosting farmers' educational investment among households with lower educational levels, lower income levels and lower educational investment levels. The Internet use increases the opportunities for academic success of rural children from disadvantaged backgrounds.
- The mediation effect test demonstrates that farmers' social capital and risk taking mediates the relationship between the Internet use and their investment in child education. The moderator effect test shows that a decline in public education satisfaction plays a positive moderating role in increasing farmers' investment in child education through the Internet use.

Based on the above findings, this study puts forward the following recommendations: (1) Increase the awareness of Internet use among farmers and their children; (2) Accelerate the integration of Internet and education through distance education and online tutoring; (3) Push the construction of information infrastructure in central and western China and in other backward rural areas, help disadvantaged farmers to improve their Internet literacy, and bridge the "digital divide"; (4) Educate farmers on the importance of the Internet use in child education and enhance their willingness of investment in education (5) Vigorously promote balanced distribution of educa-

tional resources in urban and rural areas and improve the farmers' satisfaction with public education.

*Source: Journal of Agrotechnical Economics, 2022; DOI:  
10.13246/j.cnki.jae.20220809.001*

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**NEWSLETTER**

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## **Are Screens Raising Problem Children? A Meta-Analysis of the Relationship between Screen Exposure and Behavior Problems among Young Children**

By Lu, W. X. & Li, X. W.

Correspondence to: Xiaowei Li, Faculty of Education, Beijing Normal University, China. E-mail: [bnulixw@126.com](mailto:bnulixw@126.com)

AS a result of the rapid development of information technology, electronic devices such as smart phones and tablet computers have been widely used by numerous households. As digital natives, preschool children's exposure to and over-use of electronic devices has aroused public concerns and vigilance. There are many mutually contradictory arguments in existing research on the relation between screen exposure and preschool children's behavior problems. Published in the *Journal of Studies in Early Childhood Education*, this study used meta-analysis to investigate the relationship between screen exposure and behavior problems of preschoolers and examine the effects of moderating variables on the relationship. Through literature retrieval and screening, 48 independent samples from 43 quantitative studies were obtained with a total of 76049 subjects. The results of analysis are as follows:

- A minor positive correlation ( $r = 0.169$ ) was detected between screen exposure and behavior problems, which was even weaker than that found in previous meta-analyses conducted with traditional statistical methods, indicating that the existing quantitative studies may have overestimated the relationship between screen exposure and problem behaviors of preschool children.
- The relationship between screen exposure and behavior problems was significantly moderated by kids' age and screen time. Screen exposure and excessive use of electronic gadgets are more significantly and positively correlated with problem behaviors of children aged 0-3 years. Today's electronic devices do not fit the psychological characteristics of preschool children aged 0-3 and has limited positive benefits for them. Excessive screen exposure may reduce time for other educational activities, increase the possibility of accessing inappropriate information, and negatively affect their development.
- The moderating effect of device type and research design on the relationship between screen exposure and behavior problems was

not significant, which was inconsistent with the findings of previous studies. The relationship between different types of electronic devices and problematic behaviors is complex, and the influencing mechanism needs to be further clarified.

In order for young children to develop better in the digital age, parents should critically evaluate the advantages and disadvantages of electronic devices. Rules for preschool children's use of digital devices entailing time limit and accessible contents ought to be established. Parental involvement in child screen use is an advisable way to oversee kids' screen exposure as well as improving parent-child relationships.

*Source: Journal of Studies in Early Childhood Education, 2022;  
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**NEWSLETTER**

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## **An “Assurance of Security” or “Agent of Tracking”? An Empirical Study of the Impact of Vocational Education on Social Mobility**

By Wang, Y. J. & Hu, H. Q.

Correspondence to: Yijun Wang, Institute of Vocational Education, Tongji University, China. E-mail: [wjxgh@tongji.edu.cn](mailto:wjxgh@tongji.edu.cn)

**P**UBLISHED in the *Journal of East China Normal University (Educational Sciences)*, this study drew on data from the China Family Panel Survey (CFPS) by the Institute of Social Science Survey at Peking University as the research sample to examine the impact of education on social mobility as well as the influences of the registered residence, administrative region and other factors on social mobility of populations with different educational levels. The descriptive analysis and linear regression methods were adopted in the research. The results of the study are as follows:

- A longitudinal comparison of the social status between populations of various educational backgrounds revealed that generally, those that have received higher education had higher socio-economic status; compared with the junior secondary education group, the vocational education cohort enjoyed higher incomes and social status. To be more specific, people with vocational education background usually have relatively more stable incomes and could avoid the risk of falling into the bottom end of the labor market, which is a security particularly to socio-economically disadvantaged individuals. With the increase of age, their income levels tend to improve, further promoting the advancement of their social status. Therefore, vocational education can provide an “assurance of security for individuals involved and their families.
- According to the descriptive analysis of the intergenerational social mobility of the vocational education group, children’s the education levels exceeded those of parents to a large extent, vocational education can enable children to obtain more incomes than their parents, giving families (especially rural families) strong economic support, and there are more possibilities of occupational advancement among the younger generation. However, the social status of the younger generation tends to fluctuate around the

level of that of their parents, and the upward margin of social mobility is constrained.

- The regression analysis results indicated that vocational education could more significantly promote social mobility for rural families and families in relatively backward western regions than for urban families and those in developed eastern regions.

It can be concluded from research findings that it is difficult for vocational education group to obtain a substantial raise in social status due to their limited family economic, social, and cultural capital, the “utilitarian” nature of vocational education itself, and the labor market structure, yet they can still achieve a socio-economic status above the social average, which has the tendency to improve over time. However, from an individual or family perspective, vocational education can provide an “assurance of security” and to a certain extent promote positive social mobility. In general, the security function of vocational education is more significant, though its function of tracking is still strong, and the gap in socio-economic status between the vocational education and higher education cohorts will gradually expand over time.

In light of that, the study suggests that vocational education should strive to offer students high-quality educational resources, increase employment opportunities, and improve social mobility, thus enhancing its function of assuring security. Especially, the government should increase subsidies for vocational education in the western region and guide rural families to take on vocational education through corresponding support policies. At the same time, we should encourage junior secondary graduates to receive vocational education and give full play to the positive role of vocational education in the context of industrial transformation and upgrading.

*Source: Journal of East China Normal University (Educational Sciences), 2022; 2022(07): 69-84.*

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NEWSLETTER

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## **How does Transformational Leadership of Principals Affect Teacher Organizational Commitment? An Empirical Analysis Based on Mediating and Moderating Effects**

*By Zhang, W. Y. & Mao, Y. Q.*

*Correspondence to: Yaqing Mao, Faculty of Education, Beijing Normal University, China. E-mail: maoyaqing@bnu.edu.cn*

**I**N recent years, the decline in the appeal of school organization and teaching profession has attracted wide attention in educational community. Published in the *Education Research*, this study employed the interaction ritual chains theory to examine the influence of transformational leadership of principals on teacher organizational commitment in the school context, and its influencing mechanism via the mediating and moderating effects. Teacher organizational commitment refers to teachers' mindset of identifying with the values of the school, being committed to its development, and aspiring to continue working in the school.

The research findings:

- Transformational leadership of principals has a significant positive predictive effect on teacher organizational commitment, which supports the argument that the positive predictive effect of transformational leadership on the organizational commitment of subordinates has cross-industrial and cross-cultural adaptability. Transformational principals attach importance to the social and emotional needs of teachers and can motivate their self-actualization by conveying the school visions.
- Teaching efficacy plays a partial mediating role in the relationship between transformational leadership of principals and teacher organizational commitment; in other words, transformational leadership affects teacher organizational commitment via its influence on teaching efficacy. Visions projected by transformational principals can improve teachers' self-efficacy; the higher their teaching efficacy, the more committed they are to the school.
- Teachers' social and emotional skills play a positive moderating role in the relationship between transformational leadership of principals and teacher organizational commitment. In other words, the higher the teachers' social and emotional skills, the stronger

the effect of the transformational leadership on teacher organizational commitment, and vice versa.

As a result, the study suggests boosting teachers' confidence in their roles and enhances their teaching efficacy; encouraging the change in the principals' roles and continuously improving their transformational leadership level; placing premiums on and promoting the development of teachers' social and emotional skills.

*Source: Education Research, 2022; 43(6):134-147.*

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NEWSLETTER

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## **Can Online Learning Promote Educational Equity? An Empirical Study on the “Digital Divide” in Online Learning of Primary and Secondary Students during the Epidemic**

*By Liu, Y. J. & Zhang, D. X.*

*Correspondence to: Yujun Liu, Dalian University of Technology, China. E-mail:  
[2458797570@qq.com](mailto:2458797570@qq.com)*

**T**HE whole world including China has experienced a large-scale practice of online teaching during the COVID-19 pandemic. As a result, “digital divide” induced by online learning has aroused wide concerns of the public. Recently, a study published in *Journal of Schooling Studies* sampled 508 students from 15 primary and secondary schools in Henan Province to analyze the influence of urban vs rural, school, and social class differences on online learning of primary and secondary students, using binary logistic regression model.

The research findings:

- In terms of online learning infrastructure, there are significant differences in access to network, network connectivity, and quality of digital facilities between rural and urban students and among students with distinct social status. Students from underprivileged families are remarkably disadvantaged in basic resources and equipment for online learning.
- Regarding online learning implementation, there are significant gaps in the teaching methods among different schools and considerable disparities in home learning environment and network use preference in the spare time among students from different family backgrounds
- The school background significantly affects students’ satisfaction of online learning outcomes, but urban vs rural and social class backgrounds do not have a direct and substantial impact on students’ satisfaction of online learning outcomes.
- The differences in access to network and the use of physical devices as well as online learning implementation have significant influences on online learning outcomes.

According to the above findings, this study made the following suggestions.

- The government should undertake macro-regulation on the unbalanced distribution of information technology resources between urban and rural areas, offer specialized support to rural schools, and increase the investment in educational technology in rural areas.
- Schools should vigorously strengthen teachers' training in online instruction, enhancing their online teaching ability and improving their information technology literacy.
- Families play a key role in promoting online learning equality. Parents should keep the pace of learning with the needs of the information era, provide children with stable and high-quality broadband network connection and reliable learning devices like computers, and create a favorable home learning environment.

*Source: Journal of Schooling Studies, 2022; 2022(2):58-68.*

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**NEWSLETTER**

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**Harsh Parenting and Adolescent Suicidal Tendencies:  
Based on a Moderated Mediation Model**

By Lyu, S. P., Wang, Y., Wang, X. H., Guo, X. S., & Yao, X. Y.

Correspondence to: School of Public Policy and Administration, Xi'an Jiaotong University, China. E-mail: [xhwang@mail.xjtu.edu.cn](mailto:xhwang@mail.xjtu.edu.cn)

**V**ARIOUS evidence reveals that teenagers today have become a population with high suicide risk. It is of great theoretical and practical significance to investigate the factors influencing teenagers' suicide mentality and the mechanism underlying them. Published in *Psychological Development and Education*, this study examines the relationship between harsh parenting and adolescent suicidal tendencies, based on a questionnaire survey of 4071 secondary students from four middle schools in Xi'an City. The research results are as follows:

- Harsh parenting and individuals' justification of suicide behavior have significant predictive effects on teenager suicide tendencies. First, long-term harsh parenting involving severe punishment will make the home, which should offer spiritual comfort and support to children, full of conflicts, thus increasing their suicide risk. Second, individuals who accept and support suicidal behavior are more likely to have suicidal mentality and behavior.
- Adolescents' justification of suicide behavior partially mediates the relationship between harsh parenting and adolescent suicidal tendencies. If children are often severely punished by their parents and seldom feel love and care from them, they will develop a sense of worthlessness and self-hatred, thus taking suicide as a reasonable way to avoid mental agony.
- Among various forms of social support, teacher support has the most significant moderating effect on the relationship between harsh parenting and teenager suicidal tendencies mediated by the justification of suicidal behavior. Social support refers to care and aid that teenagers get from their peers, teachers, and other social groups, which generate emotional comfort and psychological support. The results show that teacher support can reduce the influence of teenagers' justification of suicide behavior on youngsters' suicide tendencies, improve their self-efficacy and well-being, and thus eliminate suicidal intention.

Based on the above findings, it is concluded that those traditional harsh parenting ideas like the one that corporal punishment is beneficial to child growth should be abandoned. The so-called stringent discipline, especially authoritarian way of discipline, is likely to cause serious destructive consequences.

*Source: Psychological Development and Education, 2022;  
2022(6):869-878.*

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